Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method of detecting artificial illumination in a scene, comprising:

predicting at least one frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate, wherein the periodic rate is different than any of the predicted frequencies, using an exposure length that is different than any of the periods of the predicted frequencies;

detecting the presence of an artificial illuminant when the measured light from the scene contains periodic changes [[.]] ;

choosing one of the predicted frequencies;

re-measuring the light from the scene using a periodic rate that is an integer multiple of the chosen frequency; and

confirming the actual frequency of the artificial illuminant by comparing the re-measured light for a reduction in the variability of the light intensity.

Claim 2 (previously presented): The method of claim 1, wherein the periodic changes are variations in brightness.

Claim 3 (previously presented): The method of claim 1, wherein the light from the scene is focused onto a photo sensor and the periodic changes are variations in contrast.

Claim 4 (previously presented): The method of claim 1, wherein the periodic rate is close to, but not equal to, twice the common AC frequency.

Claim 5 (previously presented): The method of claim 4, wherein the common AC frequency is 60 Hz.

Claim 6 (previously presented): The method of claim 4, wherein the common AC frequency is 50 Hz.

Claim 7 (previously presented): The method of claim 1, wherein the exposure length is smaller than one half of any of the periods of the predicted frequencies.

Claim 8 (cancelled)

Claim 9 (previously presented): The method of claim 1 [[8]], and further comprising:

re-measuring the light from the scene using a periodic rate that is not an integer multiple of the chosen frequency;

determining the phase of the periodic changes by detecting the positions of the intensity variations.

Claim 10 (previously presented): The method of claim 1, and further comprising determining the phase and frequency of the periodic changes with FFT analysis of the sampled light.

Claim 11 (previously presented): The method of claim 1, wherein where the exposure length is larger than one half of any of the periods of the predicted frequencies.

Claim 12 (previously presented): The method of claim 11, and further comprising:

choosing one of the predicted frequencies;

re-measuring the light from the scene using an exposure length that is an integer multiple of the chosen frequency;

confirming the actual frequency of the artificial illuminant by comparing the re-measured light for a reduction in the variability of the light intensity.

Claim 13 (original): A method of detecting artificial illumination in a scene, comprising:

predicting a frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate using an exposure length that is equal to the period of the predicted frequency;

detecting the presence of an artificial illuminant when the variability of the measured light is high.

Claim 14 (original): The method of claim 13, further comprising:

re-measuring light from the scene at a periodic rate using an exposure length that is equal to the period of a second predicted frequency;

detecting the presence of an artificial illuminant when the variability of the re-measured light is high; and

determining that the scene contains only small amounts of artificial illumination when the variability of the re-measured light is low.

Claim 15 (previously presented): A method of detecting artificial illumination in a scene, the method comprising:

predicting a frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate, wherein the periodic rate is equal to an integer multiple of the predicted frequency, using an exposure time that is different than the period of any of the predicted frequencies; and

detecting the presence of an artificial illuminant when the variability of the measured light is high.

Claim 16 (currently amended): The method of claim 15, further comprising:

re-measuring light from the scene at a second periodic rate, wherein ~~where~~ the second periodic rate corresponds to a second predicted frequency;

detecting the presence of an artificial illuminant when the variability of the re-measured light is high; and

determining that the scene contains only small amounts of artificial illumination when the variability of the re-measured light is low.

Claim 17 (previously presented): An apparatus for detecting artificial illumination in a scene, the apparatus comprising:

a photo sensor array, the photo sensor array configured to measure light from the scene at a preselected frequency using a predetermined exposure time, wherein the preselected frequency is approximately twice a frequency of a power source supplying an artificial illuminate, but not equal to twice the frequency of the power source; and

a processor, the processor configured to determine the presence of an artificial illuminant by examining the measured light from the scene for periodic intensity variations.

Claim 18 (cancelled)

Claim 19 (currently amended): The apparatus ~~method~~ of claim 17, wherein the frequency of the power source is 60 Hz.

Claim 20 (currently amended): The apparatus ~~method~~ of claim 17 [[18]], wherein the frequency of the power source is 50 Hz.

Claim 21 (previously presented): An apparatus for detecting artificial illumination in a scene, the apparatus comprising:

a photo sensor array, the photo sensor array configured to measure light emitted from the scene at a preselected frequency using a predetermined exposure time, wherein the preselected frequency is approximately twice a frequency of a power source supplying an artificial illuminate, but not equal to twice the frequency of the power source;

a lens configured to focus light emitted from the scene onto the photo sensor array;

a processor, the processor configured to determine the presence of an artificial illuminant by examining the measured light from the scene for periodic contrast variations.

Claim 22 (cancelled)

Claim 23 (previously presented): An apparatus for detecting artificial illumination in a scene, the apparatus comprising:

a means for measuring light from the scene at a preselected frequency using a predetermined exposure time, wherein the preselected frequency is approximately twice a frequency of a power source supplying an artificial illuminate, but not equal to twice the frequency of the power source; and

a means for determining the presence of an artificial illuminant by examining the measured light form the scene for periodic intensity variations.

Claim 24 (previously presented): A digital camera comprising:

a photo sensor array, the photosensor array configured to measure light from a scene at a preselected frequency using a predetermined exposure length, wherein the preselected frequency is approximately twice a frequency of a power source supplying an artificial illuminate, but not equal to twice the frequency of the power source;

a lens configured to focus the light from the scene onto the photo sensor array; and

a processor, the processor configured to determine the presence of an artificial illuminant by examining the measured light from the scene for periodic variations.

Claim 25 (previously presented): A method of determining the illumination type in a scene, the method comprising:

predicting at least one frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate, wherein the periodic rate is different than any of the predicted frequencies, using an exposure length that is different than any of the periods of the predicted frequencies;

comparing the variability of the measured light to a first threshold;

detecting natural illumination when the variability of the measured light is below the first threshold; and

detecting artificial illumination when the variability of the measured light is above the first threshold.

Claim 26 (previously presented): The method of claim 25, further comprising:

comparing the variability of the measured light to a second threshold, wherein the second threshold is higher than the first threshold;

detecting incandescent illumination when the variability of the measured light is below the second threshold and above the first threshold; and

detecting flourescent illumination when the variability of the measured light is above the second threshold.

Claim 27 (previously presented): The apparatus of claim 17, wherein the processor is configured to determine the presence of an artificial illuminant if the intensity of the measured light from the scene varies by more than a predetermined value.

Claim 28 (previously presented): The apparatus of claim 21, wherein the processor is configured to determine the presence of an artificial illuminant if the intensity of the measured light from the scene varies by more than a predetermined value.

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